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Sequence Listing was accepted.

If you need help call the Patent Electronic Business Center at (866)  
217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: [year=2009; month=11; day=10; hr=12; min=20; sec=48; ms=188;  
]

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Application No: 10590551 Version No: 4.0

Input Set:

Output Set:

Started: 2009-10-28 19:25:41.866  
Finished: 2009-10-28 19:25:43.740  
Elapsed: 0 hr(s) 0 min(s) 1 sec(s) 874 ms  
Total Warnings: 15  
Total Errors: 0  
No. of SeqIDs Defined: 26  
Actual SeqID Count: 26

Error code	Error Description
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# SEQUENCE LISTING

<110> Genomine, Inc.  
POSTECH FOUNDATION

<120> Novel Phytochrome-interacting protein and a use thereof

<130> OP05-1002

<140> 10590551

<141> 2009-10-28

<150> KR10-2004-0013663

<151> 2004-02-27

<160> 26

<170> KopatentIn 1.71

<210> 1

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 1

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29

<210> 2

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 2

ctcgagctac ttgtttgctg cagcgagttc

30

<210> 3

<211> 1455

<212> DNA

<213> Arabidopsis thaliana

<400> 3

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120

gaactcaaca gcaacaacgc tgtgtattgg gcaaatacgtg catttgctca cacaaaactg

180

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<210> 4  
 <211> 484  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 4  
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 Lys Ser Gln Ala Asn Glu Ala Phe Lys Gly His Lys Tyr Ser Ser Ala  
 20 25 30

Ile	Asp	Leu	Tyr	Thr	Lys	Ala	Ile	Glu	Leu	Asn	Ser	Asn	Asn	Ala	Val	35	40	45
Tyr	Trp	Ala	Asn	Arg	Ala	Phe	Ala	His	Thr	Lys	Leu	Glu	Glu	Tyr	Gly	50	55	60
Ser	Ala	Ile	Gln	Asp	Ala	Ser	Lys	Ala	Ile	Glu	Val	Asp	Ser	Arg	Tyr	65	70	75
Ser	Lys	Gly	Tyr	Tyr	Arg	Arg	Gly	Ala	Ala	Tyr	Leu	Ala	Met	Gly	Lys	85	90	95
Phe	Lys	Asp	Ala	Leu	Lys	Asp	Phe	Gln	Gln	Val	Lys	Arg	Leu	Ser	Pro	100	105	110
Asn	Asp	Pro	Asp	Ala	Thr	Arg	Lys	Leu	Lys	Glu	Cys	Glu	Lys	Ala	Val	115	120	125
Met	Lys	Leu	Lys	Phe	Glu	Glu	Ala	Ile	Ser	Val	Pro	Val	Ser	Glu	Arg	130	135	140
Arg	Ser	Val	Ala	Glu	Ser	Ile	Asp	Phe	His	Thr	Ile	Glu	Val	Glu	Pro	145	150	155
Gln	Tyr	Ser	Gly	Ala	Arg	Ile	Glu	Gly	Glu	Glu	Val	Thr	Leu	Asp	Phe	165	170	175
Val	Lys	Thr	Met	Met	Glu	Asp	Phe	Lys	Asn	Gln	Lys	Thr	Leu	His	Lys	180	185	190
Arg	Tyr	Ala	Tyr	Gln	Ile	Val	Leu	Gln	Thr	Arg	Gln	Ile	Leu	Leu	Ala	195	200	205
Leu	Pro	Ser	Leu	Val	Asp	Ile	Ser	Val	Pro	His	Gly	Lys	His	Ile	Thr	210	215	220
Val	Cys	Gly	Asp	Val	His	Gly	Gln	Phe	Tyr	Asp	Leu	Leu	Asn	Ile	Phe	225	230	235
Glu	Leu	Asn	Gly	Leu	Pro	Ser	Glu	Glu	Asn	Pro	Tyr	Leu	Phe	Asn	Gly	245	250	255
Asp	Phe	Val	Asp	Arg	Gly	Ser	Phe	Ser	Val	Glu	Ile	Ile	Leu	Thr	Leu	260	265	270
Phe	Ala	Phe	Lys	Cys	Met	Cys	Pro	Ser	Ser	Ile	Tyr	Leu	Ala	Arg	Gly	275	280	285
Asn	His	Glu	Ser	Lys	Ser	Met	Asn	Lys	Ile	Tyr	Gly	Phe	Glu	Gly	Glu	290	295	300
Val	Arg	Ser	Lys	Leu	Ser	Glu	Lys	Phe	Val	Asp	Leu	Phe	Ala	Glu	Val	305	310	315
Phe	Cys	Tyr	Leu	Pro	Leu	Ala	His	Val	Ile	Asn	Gly	Lys	Val	Phe	Val	325	330	335

Val His Gly Gly Leu Phe Ser Val Asp Gly Val Lys Leu Ser Asp Ile  
 340 345 350  
 Arg Ala Ile Asp Arg Phe Cys Glu Pro Pro Glu Glu Gly Leu Met Cys  
 355 360 365  
 Glu Leu Leu Trp Ser Asp Pro Gln Pro Leu Pro Gly Arg Gly Pro Ser  
 370 375 380  
 Lys Arg Gly Val Gly Leu Ser Phe Gly Gly Asp Val Thr Lys Arg Phe  
 385 390 395 400  
 Leu Gln Asp Asn Asn Leu Asp Leu Leu Val Arg Ser His Glu Val Lys  
 405 410 415  
 Asp Glu Gly Tyr Glu Val Glu His Asp Gly Lys Leu Ile Thr Val Phe  
 420 425 430  
 Ser Ala Pro Asn Tyr Cys Asp Gln Met Gly Asn Lys Gly Ala Phe Ile  
 435 440 445  
 Arg Phe Glu Ala Pro Asp Met Lys Pro Asn Ile Val Thr Phe Ser Ala  
 450 455 460  
 Val Pro His Pro Asp Val Lys Pro Met Ala Tyr Ala Asn Asn Phe Leu  
 465 470 475 480  
 Arg Met Phe Asn

<210> 5  
 <211> 24  
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 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 5  
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24

<210> 6  
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 <212> DNA  
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<400> 6  
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<210> 7  
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<212> DNA  
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<220>  
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<400> 7  
ggatccgatg tcaggctcta ggccgact

28

<210> 8  
<211> 34  
<212> DNA  
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<220>  
<223> PCR primer

<400> 8  
gctgatcagc atggtttccg gagtcggggg tagt

34

<210> 9  
<211> 34  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 9  
cccggccgga ctaatatggc atcatcagca tcat

34

<210> 10  
<211> 27  
<212> DNA  
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<220>  
<223> PCR primer

<400> 10  
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27

<210> 11  
<211> 27  
<212> DNA  
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<220>  
 <223> PCR primer

<400> 11  
 ggatccatgc cagtatctga aaggcgt 27

<210> 12  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 12  
 atggagacca agaagtgagaa ttct 24

<210> 13  
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 <212> DNA  
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<220>  
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<400> 13  
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<210> 14  
 <211> 347  
 <212> PRT  
 <213> Arabidopsis thaliana

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 His Thr Ile Glu Val Glu Pro Gln Tyr Ser Gly Ala Arg Ile Glu Gly  
 20 25 30  
 Glu Glu Val Thr Leu Asp Phe Val Lys Thr Met Met Glu Asp Phe Lys  
 35 40 45  
 Asn Gln Lys Thr Leu His Lys Arg Tyr Ala Tyr Gln Ile Val Leu Gln  
 50 55 60  
 Thr Arg Gln Ile Leu Leu Ala Leu Pro Ser Leu Val Asp Ile Ser Val  
 65 70 75 80  
 Pro His Gly Lys His Ile Thr Val Cys Gly Asp Val His Gly Gln Phe



85	90	95
Tyr Asp Leu Leu Asn Ile Phe Glu Leu Asn Gly Leu Pro Ser Glu Glu		
100	105	110
Asn Pro Tyr Leu Phe Asn Gly Asp Phe Val Asp Arg Gly Ser Phe Ser		
115	120	125
Val Glu Ile Ile Leu Thr Leu Phe Ala Phe Lys Cys Met Cys Pro Ser		
130	135	140
Ser Ile Tyr Leu Ala Arg Gly Asn His Glu Ser Lys Ser Met Asn Lys		
145	150	155
Ile Tyr Gly Phe Glu Gly Glu Val Arg Ser Lys Leu Ser Glu Lys Phe		
165	170	175
Val Asp Leu Phe Ala Glu Val Phe Cys Tyr Leu Pro Leu Ala His Val		
180	185	190
Ile Asn Gly Lys Val Phe Val Val His Gly Gly Leu Phe Ser Val Asp		
195	200	205
Gly Val Lys Leu Ser Asp Ile Arg Ala Ile Asp Arg Phe Cys Glu Pro		
210	215	220
Pro Glu Glu Gly Leu Met Cys Glu Leu Leu Trp Ser Asp Pro Gln Pro		
225	230	235
Leu Pro Gly Arg Gly Pro Ser Lys Arg Gly Val Gly Leu Ser Phe Gly		
245	250	255
Gly Asp Val Thr Lys Arg Phe Leu Gln Asp Asn Asn Leu Asp Leu Leu		
260	265	270
Val Arg Ser His Glu Val Lys Asp Glu Gly Tyr Glu Val Glu His Asp		
275	280	285
Gly Lys Leu Ile Thr Val Phe Ser Ala Pro Asn Tyr Cys Asp Gln Met		
290	295	300
Gly Asn Lys Gly Ala Phe Ile Arg Phe Glu Ala Pro Asp Met Lys Pro		
305	310	315
Asn Ile Val Thr Phe Ser Ala Val Pro His Pro Asp Val Lys Pro Met		
325	330	335
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<210> 15  
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acgatgatgg aggatttttaa gaacccaaaaa acattgcata aacggtatgc ctatcaaatac      180
gtcttacaga ctaggcaaata cttgctagca ctgccttctc ttgttgatat aagtgttcca      240
catggcaaac atatcactgt ttgcggtgac gtcatgggtc agttctacga tcttctcaat      300
atctttgagc ttaatggcct cccttcggag gagaacccat acctatttaa tggcgacttt      360
gtggacagag gctcattctc cgttgagatc atcctcactt tgtttgcttt caagtgcattg      420
tgcccatcat ccataatatc agccagagga aaccatgaaa gcaagagcat gaacaaaatt      480
tatggttttg agggtgaggt tcgggtccaag ttgagtgaag aattcgtgga tctctttgct      540
gaagttttct gttacctccc gttgggtcat gttataaatg ggaaggctct cgtgggtacat      600
ggaggtcttt tcagtgttga cggcgtgaaa ctctcagaca tcagagccat tgacagattc      660
tgtgagccac cagaggaagg actaatgtgt gaactattgt ggagtgatec tcaacctctc      720
cctggaagag gcccaagcaa gcgaggaggt ggtctatcat ttggtggaga tgtgacaaag      780
aggtttttgc aagataacaa tttagatttg ttgggtccggc cacatgaagt aaaagatgaa      840
ggttatgagg ttgaacatga cggtaaaactc ataactgtct tctctgcgcc aaattactgt      900
gatcagatgg gtaataaggg agccttcatt cgttttgaag ctctgatata gaagccaaac      960
attgttacat tctcagcagt gcctcatccg gatgtgaagc ctatggcata tgcaaacaac     1020
tttctcagga tgttcaacta a                                     1041

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<210>      16
<211>      479
<212>      PRT
<213>      Homo sapiens

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<220>
<221>      PEPTIDE
<222>      (1)
<223>      PAPP5

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Lys Ser Gln Ala Asn Glu Ala Phe Lys Gly His Lys Tyr Ser Ser Ala
      20              25              30

Ile Asp Leu Tyr Thr Lys Ala Ile Glu Leu Asn Ser Asn Asn Ala Val
      35              40              45

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Tyr Trp Ala Asn Arg Ala Phe Ala His Thr Lys Leu Glu Glu Tyr Gly  
 50 55 60

Ser Ala Ile Gln Asp Ala Ser Lys Ala Ile Glu Val Asp Ser Arg Tyr  
 65 70 75 80

Ser Lys Gly Tyr Tyr Arg Arg Gly Ala Ala Tyr Leu Ala Met Gly Lys  
 85 90 95

Glu Lys Asp Ala Leu Lys Asp Phe Gln Gln Val Lys Gly Leu Ser Pro  
 100 105 110

Asn Asp Pro Asp Ala Thr Arg Lys Leu Lys Glu Cys Glu Lys Ala Val  
 115 120 125

Met Lys Leu Lys Phe Glu Glu Ala Ile Ser Val Pro Val Ser Glu Arg  
 130 135 140

Arg Ser Val Ala Glu Ser Ile Asp Phe His Thr Ile Glu Val Glu Pro  
 145 150 155 160

Gln Tyr Ser Gly Ala Arg Ile Glu Gly Glu Glu Val Thr Leu Asp Phe  
 165 170 175

Val Lys Thr Met Met Glu Asp Phe Lys Asn Gln Lys Thr Leu His Lys  
 180 185 190

Arg Tyr Ala Tyr Gln Ile Val Leu Gln Thr Arg Gln Ile Leu Leu Ala  
 195 200 205

Leu Pro Ser Leu Val Asp Ile Ser Val Pro His Gly Lys His Ile Thr  
 210 215 220

Val Cys Gly Asp Val His Gly Gln Phe Tyr Asp Leu Leu Asn Ile Phe  
 225 230 235 240

Glu Asp Asn Gly Leu Pro Ser Glu Glu Asn Pro Tyr Leu Phe Asn Gly  
 245 250 255

Asp Phe Val Asp Arg Gly Ser Phe Ser Val Glu Ile Ile Leu Thr Leu  
 260 265 270

Phe Ala Glu Lys Cys Met Cys Pro Ser Ser Ile Tyr Leu Ala Arg Gly  
 275 280 285

Asn His Glu Ser Lys Ser Met Asn Lys Ile Tyr Gly Phe Glu Gly Glu  
 290 295 300

Val Arg Ser Lys Leu Ser Glu Lys Phe Val Asp Leu Phe Ala Glu Val  
 305 310 315 320

Phe Cys Tyr Leu Pro Leu Ala His Val Ile Asn Gly Lys Val Phe Val  
 325 330 335

Val His Gly Gly Leu Phe Ser Val Asp Gly Val Lys Leu Ser Asp Ile  
 340 345 350

Arg Ala Ile Asp Arg Phe Cys Glu Pro Phe Glu Glu Gly Leu Met Cys  
 355 360 365

Glu Leu Leu Trp Ser Asp Pro Gln Pro Leu Pro Gly Arg Gly Pro Ser  
 370 375 380

Lys Arg Gly Val Gly Leu Ser Phe Gly Gly Asp Val Thr Lys Arg Phe  
 385 390 395 400

Leu Gln Asp Asn Asn Leu Asp Leu Leu Val Arg Ser His Glu Val Lys  
 405 410 415

Asp Glu Gly Tyr Glu Val Glu His Asp Gly Lys Leu Ile Thr Val Phe  
 420 425 430

Ser Ala Pro Asn Cys Asp Gln Met Gly Asn Lys Gly Ala Phe Ile Arg  
 435 440 445

Phe Glu Ala Pro Asp Met Lys Pro Asn Ile Val Thr Phe Ser Ala Val  
 450 455 460

Pro His Pro Met Ala Tyr Ala Asn Asn Phe Ile Arg Met Phe Asn  
 465 470 475

<210> 17  
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 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> PEPTIDE  
 <222> (1)  
 <223> PP5

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 Phe Lys Ala Lys Asp Tyr Glu Asn Ala Ile Lys Phe Tyr Ser Gln Ala  
 35 40 45  
 Ile Glu Leu Asn Pro Ser Asn Ala Ile Tyr Tyr Gly Asn Arg Ser Leu  
 50 55 60  
 Ala Tyr Leu Arg Thr Glu Cys Tyr Gly Tyr Ala Leu Gly Asp Ala Thr  
 65 70 75 80  
 Arg Ala Ile Glu Leu Asp Lys Lys Tyr Ile Lys Gly Tyr Tyr Arg Arg  
 85 90 95  
 Ala Ala Ser Asn Met Ala Leu Gly Lys Phe Arg Ala Ala Leu Arg Asp

100

105

110

Tyr Glu Thr Val Val Lys Val Lys Pro